

ACOUSTIC HABITAT MODELLING FOR THE MAPPING OF BIOLOGICAL COMMUNITIES

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In the framework of the MAREBASSE project ('Management, Research and Budgeting of Aggregates in Shelf Seas related to End-users', EV/02/18A, Van Lancker et al., 2005) and the MESH project ('Mapping European Seabed Habitats', Interreg IIIb), biologically relevant habitat maps are produced, based on acoustic datasets and ground truthed with physical and biological samples.

The habitat map production comprised the following four key steps: (1) getting the best out of the ground truth data; (2) selecting and deriving the best available input and most appropriate data coverages; (3) using the most appropriate techniques for interpreting the data through integration and modelling, and; (4) designing the map layout to create a map fit for purpose.

Emphasis is put on step 2 to optimally classify the acoustic data sets (both bathymetry and backscatter data) and to produce some derivatives (e.g. Bathymetric Position Index). Furthermore detailed full coverage maps of sedimentological parameters were produced, such as median grain size and silt-clay percentage, but also maps of the d₉₀ and d₁₀ of the sand fraction, sorting and skewness. In step 3 cross tabulation was used to correlate biological ground truthing data with the full coverage physical maps. Finally in step 4 habitat maps were produced, presenting biologically relevant classes of habitat suitability for different macrobenthic communities.

References

Van Lancker V., S. Deleu, V. Bellec, I. Du Four, E. Verfaillie, M. Fettweis, D. Van den Eynde, F. Francken, J. Monballiu, A. Guardino, J. Portilla, J. Lanckneus, G. Moerkerke and S. Degraer. 2005. Management, research and budgeting of aggregates in shelf seas related to end-users (Marebasse). Scientific Report Year 3. Belgian Science Policy. 103p.